Contents

Editorial 1

Section 1: Biomaterials for Tissue Engineering

Design of Synthetic Polymeric Structures for Cell Transplantation and Tissue Engineering. 3
S. COHEN, M. C. BAÑO, L. G. CIMA, H. R. ALLCOCK, J. P. VACANTI, C. A. VACANTI & R. LANGER (USA)

Section 2: Biomaterials for Hard Tissue Applications

Histological Patterns of the Tissue Reaction to Polymers in Orthopaedic Surgery. . . 11
J. H. BOSS, I. SHAJRAWI & D. G. MENDES (Israel)

Poly(HEMA)–Collagen Composite as a Biomaterial for Hard Tissue Replacement . . 19
M. ŠTOL, K. SMETANA, JR., P. KORBELÁŘ & M. ADAM (Czech Republic)

In-vivo and Clinical Evaluations of Poly (L-lactide) Plates and Screws for Use in Maxillofacial Traumatology 21
K. L. GERLACH (Germany)

The Development of a Novel Implant: Induction of a Non-rigid and Self-Renewing Anchorage of Artificial Implants to Bone 29
S. PITARU & M. NOFF (Israel)

Ultra-high Strength, Self-Reinforced Absorbable Polymeric Composites for Applications in Different Disciplines of Surgery 35
P. TÖRMÄLÄ (Finland)

Section 3: Biomaterials for Soft Tissue, Blood and Cardiovascular Applications

A New Gas Discharge Process for Preparation of Non-Fouling Surfaces on Biomaterials 41
M.-S. SHEU, A. S. HOFFMAN (USA), J. G. A. TERLINGEN & J. FEIJEN (The Netherlands)

The Influence of Chemical Functional Groups on Implant Biocompatibility 47
K. SMETANA JR, J. VACÍK, D. SOUČKOVÁ & S. PITROVÁ (Czech Republic)

An Improved Method of Endothelial Seeding on Small Caliber Prosthetic Vascular Grafts Coated with Natural Extracellular Matrix 51
A. SCHNEIDER, H. SCHWALB, I. VLODAVSKY & G. URETZKY (Israel)

Tetrahydrofuran (co)polymers as Potential Materials for Vascular Prostheses 57
B. J. M. POL, L. VAN DER DOES & A. BANTJES (The Netherlands)

In-vitro and In-vivo Models for the Study of the Relationship between Hydrophilicity and Calcification of Polymeric and Collageneous Biomaterials 61
G. GOLOMB, A. BARASHI, D. WAGNER & O. NACHMIAS (Israel)

Analysis of Biomedical Polymer Surfaces: Polyurethanes and Plasma-Deposited Thin Films 71
B. D. RATNER, B. J. TYLER & A. CHILKOTI (USA)

Plasma Protein Adsorption on Model Biomaterial Surfaces 85
V. HLADY, J. D. ANDRADE, C.-H. HO, L. FENG & K. TINGEY (USA)

Safety and Intracardiac Function of a Silicone–Polyurethane Elastomer Designed for Vascular Use 95
D. HOFFMAN, G. GONG, L. PINCHUK & D. SISTO (USA)

The Role of Cellular Fibronectin in the Interaction of Human Endothelial Cells with Polymers 101
A. DEKKER, T. BEUGELING, A. POOT, J. SPIJKERS, J. A. VAN MOURIK, J. FEIJEN, A. BANTJES & W. G. VAN AKEN (The Netherlands)

Section 4: Biomaterials for Drug Delivery Systems

A Morphine-Triggered Delivery System Useful in the Treatment of Heroin Addiction 109
K. V. ROSKOS, J. A. TEFFT & J. HELLER (USA)

Indomethacin-Loaded Poly (D,L-lactide) Nanocapsules: Protection from Gastrointestinal Ulcerations and Anti-inflammatory Activity Evaluation in Rats 121
N. AMMOURY, M. DUBRASQUET, H. FESSI, J. PH. DEVISSAGUET, F. PUISIEUX (France) & S. BENITA (Israel)

The Influence of Coatings with Surfactants on the Body Distribution of Nanoparticles after Intravenous Injection to Rats 131
J. KREUTER (Germany)

Glucose-Sensitive Polymeric Matrices for Controlled Drug Delivery 135
M. GOLDRAICH & J. KOST (Israel)

In-vitro Degradation of Polyesteramides Containing Poly-ϵ-caprolactone Blocks . . . 143
P. J. A. IN 'T VELD, P. J. DIJKSTRA & J. FEIJEN (The Netherlands)

The Efficacy of Controlled Antibiotic Release for Prevention of Polyethyleneterephthalate- (Dacron-) Related Infection in Cardiovascular Surgery 149
M. KARCK, L. FORGIONE & A. HAVERICH (Germany)

Ultrasound for Controlled Delivery of Therapeutics 155
J. KOST (Israel)

Ocular and Brain Biocompatibility of Polymeric Delivery Materials Prepared from Ester Derivatives of Hyaluronic Acid 163
A. OLIVI, K. D. KIM (USA), L. BENEDETTI (Italy), J. I. EPSTEIN, M. L. PINN (USA), L. CALLEGARO (Italy) & H. BREM (USA)

Calendar of Events 169

Index 173